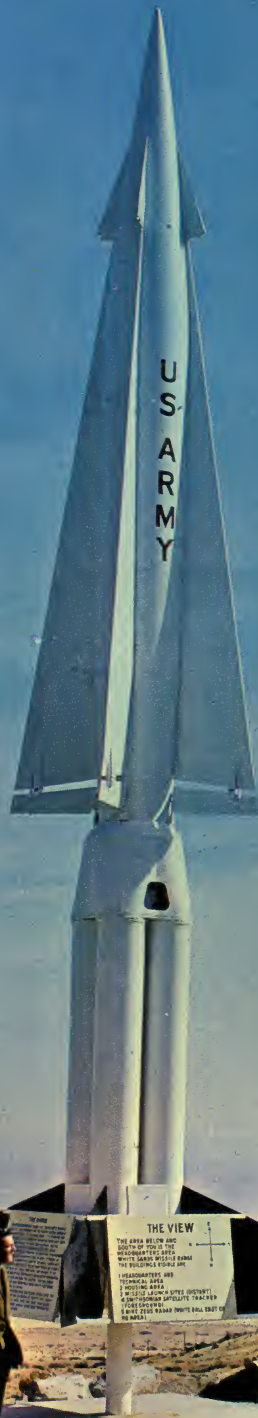


PULSE CHANGES

Traid Corporation

Photographic Instrumentation



THE VIEW
THE AREA BEYOND AND
SOUTH OF YOU IS THE
MOUNTAIN AREA.
WITH MANY PEAKS AND
VALLEYS. THE AREA
IS A MOUNTAIN AREA.
LEADERSHIP AND
TECHNICAL AREA.
A MOUNTAIN AREA.
A MOUNTAIN AREA.
A MOUNTAIN AREA.
A MOUNTAIN AREA.
A MOUNTAIN AREA.



New Products From Traid

This booklet presents the "new look" of Traid Corporation, reflecting the rapid growth in recent months of the company as a whole, and of its Photographic Instrumentation Division, whose products are shown on the following pages.

Many of these products are new to the field, and we are pleased to present them to you as a means of doing the job of optical instrumentation in a better way and at lower cost.

Some of these new products reflect the constant work of product development and improvement that is done by firms that we have represented for more than a decade. In other cases, we welcome new manufacturers to our list of suppliers. We shall present the ideas and equipment of these firms to you, the user of photo instrumentation, through a vastly expanded program of field service, exhibits and demonstrations, and technical literature. I feel that the list of firms represented by Traid that is found on Page 12 represents much of the best thinking and the most imaginative design talent of the industry. We are proud to sell their products.

Traid also includes two other Divisions. The newest one is Artcraft Industries, the nation's leading supplier of original art work and color reproductions of paintings. Its color presses produced this brochure.

The third and largest part of Traid is the FOTRON Division, although its story has hardly yet begun to be written. The revolutionary FOTRON electronic still camera for amateur use, now sold in only a few western states, will soon achieve nationwide sales status. Its success strengthens our overall corporate effort, and permits us to further expand our instrumentation program. The net result is a wider spectrum of equipment and services that will help you get the job done.

Sincerely,

KENNETH M. HARDEN,
President

FRONT COVER: Traid's new Clark Cortez "showroom on wheels" visits White Sands Missile Range, New Mexico. Piloted by sales engineers Carlos Elmer and John Kessinger, this spacious vehicle was completing a 23,000-mile circuit of the nation when this picture was taken.

(Color photo by Frank Elmer)

Traid's computing facility at the home office permits rapid reporting of business data to support a fast-expanding scope of activity. Shown are Kenneth M. Harden, left, Traid's President, who came to the company from service as Senior Vice-President, Encyclopedia Britannica, Inc.; and Robert W. King, Manager, Photographic Instrumentation Division, who joined Traid in 1958 from work as a Flight Test Engineer at Douglas Aircraft Company, Santa Monica, California.

Examples of products of two of the company's Divisions include the FOTRON still camera, featuring built-in stroboscopic flash lamp, magazine load, motorized film advance, rechargeable power supply, and simplified controls; and the Traid 15 aircraft camera, designed to supply 50 feet of 16mm film in an extremely compact package for use aboard missiles and aircraft.



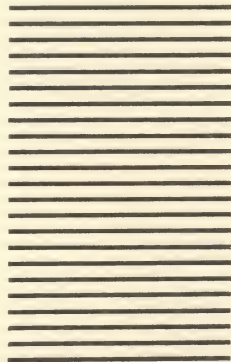
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TRAID CORPORATION
P. O. Box 1839
Glendale, California 91209



Please send information on Traid equipment for the following application: _____

- ☐ Adtrol Electronics Corporation
Timing Light Generators
- ☐ Bell & Howell Company
16mm and 35mm Cine Cameras
- ☐ Century Precision Optical Company
PANTEL lenses 4" to 24"
- ☐ Consolidated Systems Corporation
16mm aircraft cameras
- ☐ Huber Industries
Camera Positioning Mounts

- ☐ J. A. Maurer, Inc.
70mm pulse cameras
- ☐ Newtek, Inc.
Optical bench
- ☐ Neyhart Enterprises
AUTOMAX 35mm pulse cameras
- ☐ Par Products, Aerospace
Controls Corporation
70mm Scope Recorders
- ☐ Photo-Sonics, Inc.
16mm high-speed cameras

- ☐ Street Laboratory of Applied Physics
SLAP-80 Photometer
- ☐ The Optical Craftsman
Telescopes
- ☐ Traid Corporation
 - ☐ 35mm FOTOTRACKER Cameras
 - ☐ Specialized optics
- ☐ Vanguard Instrument Corporation
Film Readers and Measuring Machines
- ☐ Vue-Tronics, Inc.
TV Film Recorders

Name _____

Department _____

Company _____

Address _____

City _____ State _____

Telephone: Area Code _____ Number _____ Extension _____

The 35mm Automax cine-pulse camera has long been a versatile and exceptionally reliable tool in the aircraft and missile flight test program of our nation. It is now finding additional new roles in advanced information storage systems on the ground.

The unique features that contributed to Automax use in great quantity by both military and civil aviation flight instrumentation agencies are equally valuable in applications to data processing systems. Some of these features are the Automax's unique electro-mechanical clutch and brake combination that operated in one test for more than 25 million cycles without failure, its star-type Geneva film movement engaging 16 film perforations, and lifetime lubrication.

Many models have been developed to perform specific tasks, including CRT recording, double-frame formats, time exposures, and auxiliary data chamber recording.

**Neyhart
Enterprises**
Automax®
35mm
Pulse
Camera
For The
Computer
Age

G-1 FEATURES:

- ☐ Single frame 35mm
- ☐ Pulse to 10 frames/sec
- ☐ Cine rate of 16 frames/sec
- ☐ 28V DC or 110 V AC Drive Motor
- ☐ Mitchell mount film magazines
- ☐ Eyemo lens mounting

G-1D FEATURES:

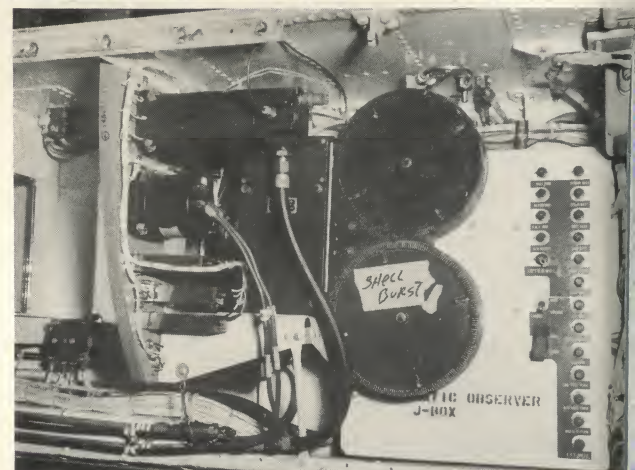
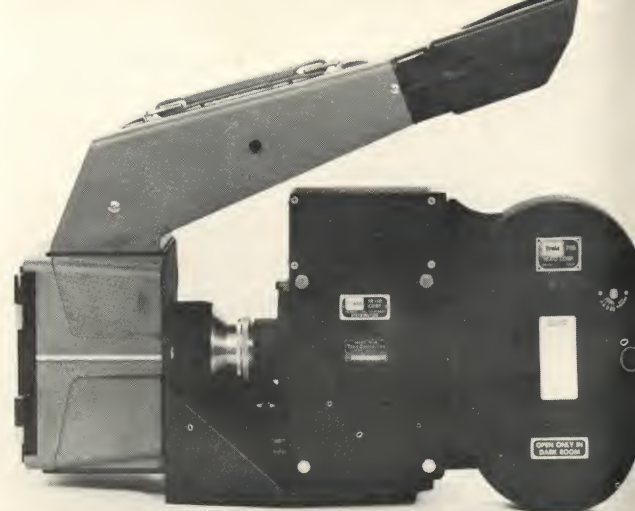
- ☐ Double frame 35mm
- ☐ Pulse to 5 frames/sec
- ☐ Cine rate of 8 frames/sec
- ☐ Leica lens mounting

G-2 FEATURES:

- ☐ Single frame 35mm
- ☐ Auxiliary data chamber
- ☐ Threaded lens mounting

ADDITIONAL MODELS:

- ☐ Shutter dwell for time exposures
- ☐ Open to open shutter models
- ☐ Fast pulldown for CRT recording



Automax cine-pulse camera is shown mounted on CRT recording hood, which permits scope viewing and recording on film without movement of camera.

Frame from Automax G-2 camera, courtesy U.S. Weather Bureau Research Flight Facility, Miami, Florida. Cloud formations are recorded at the rate of 1 frame/sec.

Photo shows Automax G-1 camera installed in the NF-104 to record instrument data.

Lockheed NF-104 streaks for the edge of space, assisted by a rocket motor installed in the tail. Used as an astronaut trainer, the NF-104 incorporates small jets in the body and wings for control at high altitude.

(Color photo by U.S. Air Force)





**J. A. Maurer,
Inc.**
**Maurer
70mm
Pulse
Cameras**

The name of J. A. Maurer has long been associated with the design and production of high-precision aircraft and motion picture cameras. Traid is pleased to announce its distribution of two new products from the Maurer line which have special application to the field of aircraft and missile instrumentation.

The Maurer 220 and P-220 cameras obtain full frame (2¼" x 2¼") pictures on 70mm film at rates up to 5½ frames per second. Of compact and lightweight design, the cameras accept 50-foot or 100-foot film magazines.

The 220 camera accepts lenses varying in focal length from 38mm to 305mm, while the P-220 version also provides automatic exposure control with the 38mm lens.

While designed for airborne operation, these instruments will also find application in ground use, where large-format sequence pictures must be provided by cameras that offer highly reliable operation in a small and easily handled package.

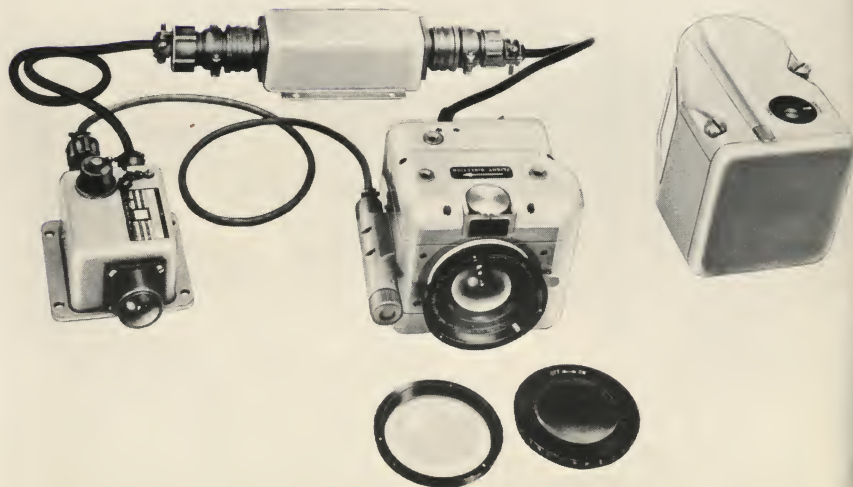


220 FEATURES:

- ☐ 14 perforation pulldown
- ☐ Shutter speeds 1/500, 1/1000, 1/2000 second
- ☐ Interchangeable lenses, 38, 80, 150, and 305 mm
 - ☐ 28V DC motor
- ☐ Pulse to 5½ frames/sec
- ☐ Cine rate 6 frames/sec

P-220 FEATURES:

- ☐ Automatic exposure control
- ☐ 38mm Zeiss Biogon lens (97° field to corners)
- ☐ Pulse to 5½ frames/sec
- ☐ Cine rate 6 frames/sec



Traid Corporation

Traid 35mm Fototracker Cameras

Huber Industries

Traid has developed a compact and lightweight 35mm cine camera for airborne or ground use, incorporating many features usually found only on expensive studio-type cameras. Speeds to 80 frames per second are provided, together with variable shutter, magazine adaptation, and built-in motors.

When used with the built-in 28V DC motors, the Traid 75 FOTOTRACKER is easy to use as a hand-held camera for aerial photography. On the ground, the AC motor model permits slow-rate recording in either cine or continuous streak modes.

Traid 75C camera is shown on a Huber instrument mount, which permits quick mounting and detaching of the camera without necessity for realignment. Huber mounts are available for many types of cameras—indicate camera type in your inquiry.



TRAID 75A FEATURES:

- ☐ Speeds of 20, 40, 60, and 80 frames/sec
- ☐ Mitchell magazines to 400-foot capacity
- ☐ Variable shutter
- ☐ Two 28V DC motors built-in

TRAID 75C FEATURES:

- ☐ Speeds of 15, 20, 30 and 40 frames/sec
- ☐ 100-foot internal film capacity
- ☐ One 28V DC motor

TRAID 75D FEATURES:

- ☐ 115V AC motor
- ☐ Streak or slow cine operation
- ☐ Variable shutter for cine
- ☐ 100, 200, or 400-foot film capacities

New design features by Consolidated Systems Corporation have been incorporated in its series of 16mm aircraft motion picture cameras, including a versatile automatic exposure control system in the KS-27B camera.

The KB-3A aircraft camera and the new KS-27B version of the same camera provide the basic gun camera capability of the U.S. Air Force "Century Series" of fighter aircraft. Recent availability of a 100-foot daylight spool film magazine has further increased the versatility of this line of instruments.

The line is rounded out by the 200-PA pulse camera, a small and light-weight camera providing 50-foot magazine load capacity at low cost.

Traid has developed a wide variety of accessories for the KB-3A camera series, including timing light assemblies, and offers both slow speed modifications down to 1 frame/sec cine, and high speed modification up to 100 frames/sec. Film loads in many emulsions are also available from Traid for use in the 50-foot film magazine.

**Consolidated
Systems
Corporation**
CSC
16mm
**Aircraft
Cameras**

Traid sales engineer Dick Freeborg with KB-3A aircraft camera used in U.S. Air Force operational fighter aircraft, is shown with F-5A by Northrop. Dick worked with gun cameras while in the Air Force prior to joining Traid in 1959. He covers Northern California, Nevada, Utah, and other Western states.

KB-3A FEATURES:

- ☐ Speeds 16, 32, 64 frames/sec
- ☐ 50-foot and 100-foot film magazines
- ☐ Variable shutter
- ☐ 28V DC motor
- ☐ GSAP and "C" lens mounts

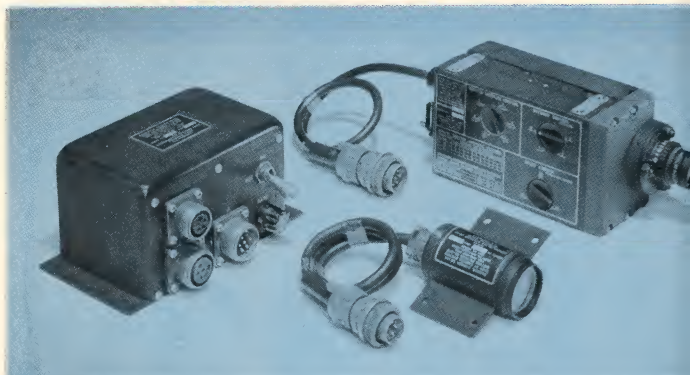
KS-27B FEATURES:

- ☐ Speeds of 16, 32, 64 frames/sec
- ☐ 50-foot and 100-foot film magazines
- ☐ Automatic exposure control
 - ☐ 28V DC motor
 - ☐ GSAP and "C" lens mounts

200-PA FEATURES:

- ☐ Pulse to 6 frames/sec
- ☐ 28V DC solenoid
- ☐ 50-foot magazine load
- ☐ "C" lens mount

50-foot and 100-foot magazines interchange on either KB-3A or KS-27B cameras. 100-foot magazine uses daylight load spools; 50-foot film loads are available from Traid in a wide variety of emulsions.



Lunar Landing Research Vehicle (LLRV) is shown hovering in tests at the National Aeronautics Space Administration Flight Research Center, Edwards, California.

Research vehicle is used to investigate and study the techniques of manned lunar landings and takeoffs.

KB-3A aircraft camera is used to record flight test data on-board the aircraft.

(Photo Courtesy NASA Flight Research Center.)





Newtek, Inc.
A
New
Approach
To
Lens
Testing

The testing of optical assemblies by the familiar resolution chart methods has failed to provide a truly objective and controllable approach to this important step in obtaining optimum imaging and photo recording systems. A new approach to this problem is the measurement of the Modulation Transfer Function to provide an objective measure of performance of optical systems.

The Newtek Lens Test System measures Modulation Transfer Functions of optics through a carefully selected combination of light source, sine wave pattern generator, collimator, test bench, and recorder. The unit is completely automatic, being internally programmed to produce a continuous sequence of spatial frequencies and to measure and plot the MTF curve.

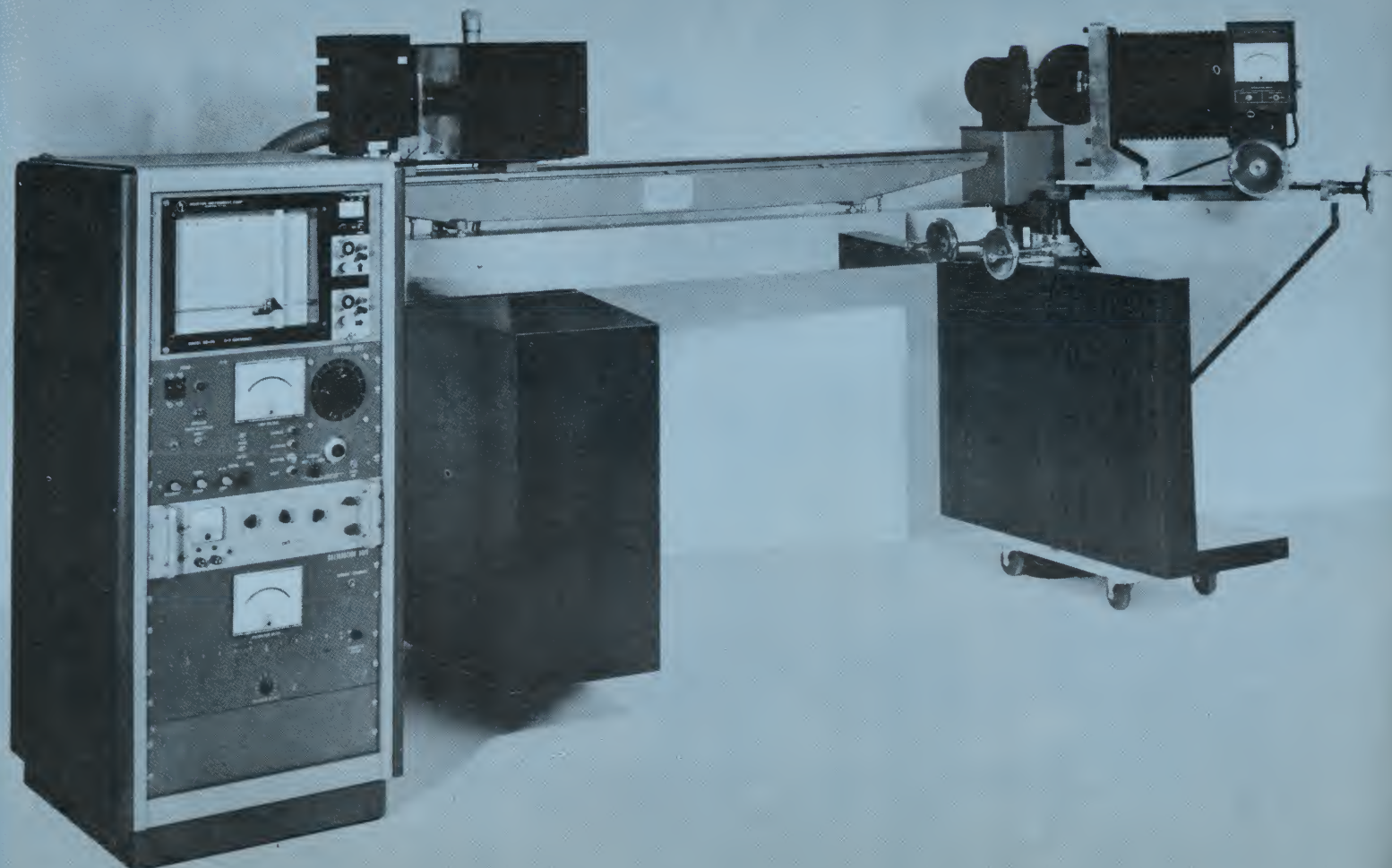
The instrument produces lens Modulation Transfer Functions accurate to 2% over a range of resolution from 2.5 to 200 lines/mm and from any point in the field of a lens from 0° to 45°. Focal lengths from 0.5 to 20 inches with apertures from f/1.0 to f/100 may be measured. The unit can also be readily adapted to record MTF at spatial frequencies much higher than 200 lines/mm.

Output data are plotted on standard 8½ x 11-inch graph paper, a sweep through the frequency range of 0.06 to 50 cycles/mm being performed in two minutes.

The Newtek Optical Test Bench is designed in modular form, with the following units comprising a complete system:

- | | | |
|------------------------|----------------|-------------------|
| 1. Sine Wave Generator | 3. Scanner | 5. Recorder |
| 2. Collimator | 4. Demodulator | 6. Mounting Bench |

Because of this modular design, your existing optical bench may be adapted to measure Modulation Transfer Functions through substitution of the Newtek Sine Wave Generator module for your existing target. Other Newtek modules can also be incorporated in conventional optical benches now in use.



During the past two years Traid has supplied a large number of Adtrol Timing Light Generators (TLG) for use as a compact and accurate source of 10, 100, and 1,000 cps pulses. Two new models have now been added to this line.

The Timing Pulse Generator (TPG) supplies double pulses every 10th mark when used at 100 cps, and also provides a triple pulse every 100th mark when used at 1,000 cps. These extra marks greatly facilitate timing mark counting and thus speed up film measurement and assessment. The new TPG also incorporates a nickel-cadmium rechargeable battery for self-contained power, or can be operated from external AC or external DC sources.

The Ruggedized Timing Generator (RTG) is encased in a heavy metal case and is completely podded for high "G" load usage. All Adtrol units are completely solid state and designed for high reliability in operation.

TPG FEATURES:

- ☐ 10 cps range—single pulse every 100 msec
- ☐ 100 cps range—single pulse every 10 msec and double pulse every 100 msec
- ☐ 1,000 cps range—single pulse every msec, double pulse every 10 msec, and triple pulse every 100 msec
- ☐ Rechargeable internal nickel-cadmium battery
- ☐ Can also use external AC or external DC
- ☐ Accuracy — $\pm .5\%$

**Adtrol Electronics
Corporation**
Adtrol
**Timing Light
Generators**

RTG FEATURES:

- ☐ 10, 100, and 1,000 cps outputs
- ☐ External 28V DC power
- ☐ Heavy duty case for high "G" loading

TLG FEATURES:

- ☐ Small, lightweight
- ☐ Accuracy — $\pm 1\%$
- ☐ All solid state
- ☐ 10, 100, 1,000 cps outputs





Traid now provides nationwide sales and service functions in photographic instrumentation from its new 35,000-square-foot headquarters shown above, and at sales offices in Maryland and Florida. Our expanded facilities will enable us to serve you more quickly and efficiently.

Many of the products listed in these pages are of Traid design and are built in our shops. Many more are produced by other photo instrumentation manufacturers whose products we are privileged to distribute. These include:

ADTROL ELECTRONICS CORPORATION
BELL & HOWELL COMPANY
CENTURY PRECISION OPTICAL COMPANY
CONSOLIDATED SYSTEMS CORPORATION
HUBER INDUSTRIES
J. A. MAURER, INC.
NEWTEK, INC.

NEYHART ENTERPRISES
THE OPTICAL CRAFTSMAN
PAR PRODUCTS, AEROSPACE CONTROLS CORPORATION
PHOTO-SONICS, INC.
STREET LABORATORY OF APPLIED PHYSICS
VANGUARD INSTRUMENT CORP.
VUE-TRONICS, INC.

A Nationwide Sales Organization

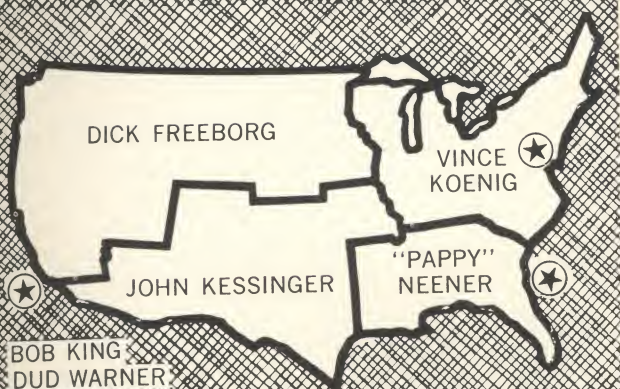
These products and those from Traid will be shown throughout the land by means of our mobile showroom vehicles and at technical meeting exhibits, including the following:

- | | |
|------------------|--|
| March 29-April 1 | Society of Motion Picture and Television Engineers, Ambassador Hotel, Los Angeles |
| March 30-April 1 | American Society of Photogrammetry, Shoreham Hotel, Washington, D.C. |
| April 26-27 | Society of Photo-Optical Instrumentation Engineers, Seminar-in-Depth, International Hotel, Los Angeles |
| May 17-21 | Society of Photographic Scientists and Engineers, Sheraton Hotel, Cleveland |
| July 26-29 | American Institute of Aeronautics and Astronautics, Civic Center, San Francisco |
| August 16-20 | Society of Photo-Optical Instrumentation Engineers, Annual Technical Meeting and Exhiborama, Jack Tar Hotel, San Francisco |
| September 12-18 | Seventh International Congress on High-Speed Photography, Kongreshaus, Zurich, Switzerland |
| October 4-7 | Instrument Society of America, Sports Arena, Los Angeles |

You are cordially invited to inspect our equipment at these exhibits; by a visit to our offices, or through a visit by our Clark Cortez demonstration van at your own facility. Phone our nearest office for a schedule of the van's travels in your area.



PANORAM Color Photo by Carlos Elmer



Map shows office locations and general division of the country in regions.

TRAID OFFICES

Home office:

777 Flower Street

P.O. Box 1839

Glendale, California 91209

213/245-9393

3702 Munsey Street

Wheaton, Maryland

301/942-5341

1207 Banana River Drive

Indian Harbor Beach, Florida 32937

305/262-2944



Traid sales engineers are shown in the Clark Cortez mobile showroom and at a typical equipment exhibit. At left in interior of van is John Kessinger, a former U.S. Air Force photographic officer who covers the Southwestern area for Traid. Prior to joining us, he served as Staff Photographic Officer, Patrick AFB, Florida. In center is former U.S. Army Signal Corps Photographic Officer E. H. "Pappy" Neener, who served at Redstone Arsenal, Huntsville, Alabama, and in a civilian capacity at RCA Range Photo, Cape Kennedy, Florida. "Pappy" operates Traid's Southeastern office in Florida. Vince Koenig, right, a former U.S. Air Force photographic pilot and head of photo instrumentation for Pan American World Airways at Yuma Proving Ground, Arizona, heads the Traid office in Maryland. In photo at right, Koenig and Neener man Traid exhibit.

Traid sales engineer Dud Warner is shown with the Photo-Sonics 16mm-1B/AC high-speed camera and 1,200-foot film magazine with a background of the Atlas rocket engine firing stand at Edwards AFB, California. Dud joined Traid in 1964 with an extensive background in color and black and white photography. Unless otherwise specified, the color photographs in this brochure are his work.



Photo-Sonics, Inc.
Photo-Sonics
The
High-
Resolution
Prism
Camera

Photo-Sonics, Inc., our neighbor in nearby Burbank, California, is the world's foremost producer of high-speed motion picture cameras. These instruments, available in 16mm, 35mm, or 70mm film widths, incorporate a combination of rotating prism and disc shutter to provide high-speed pictures with a new standard of sharpness and motion-stopping ability.

Traid is proud to serve as distributor for the most popular models from this versatile line of cameras—the 16mm-1B and 16mm-1B/AC. These rugged and compact film recorders have long served as basic data-gathering devices for rocket engine test work, missile launch studies, and rocket sled use.

Recent availability of the AC motor version of the camera has extended its use into laboratory and industrial filming on the ground. We would be pleased to demonstrate this new standard of high-speed picture quality in your own facility—it's the BEST high-speed camera in the world!

The Photo-Sonics 16mm-1B camera uses a combination of rotating prism and adjustable disc shutter for high-quality records.

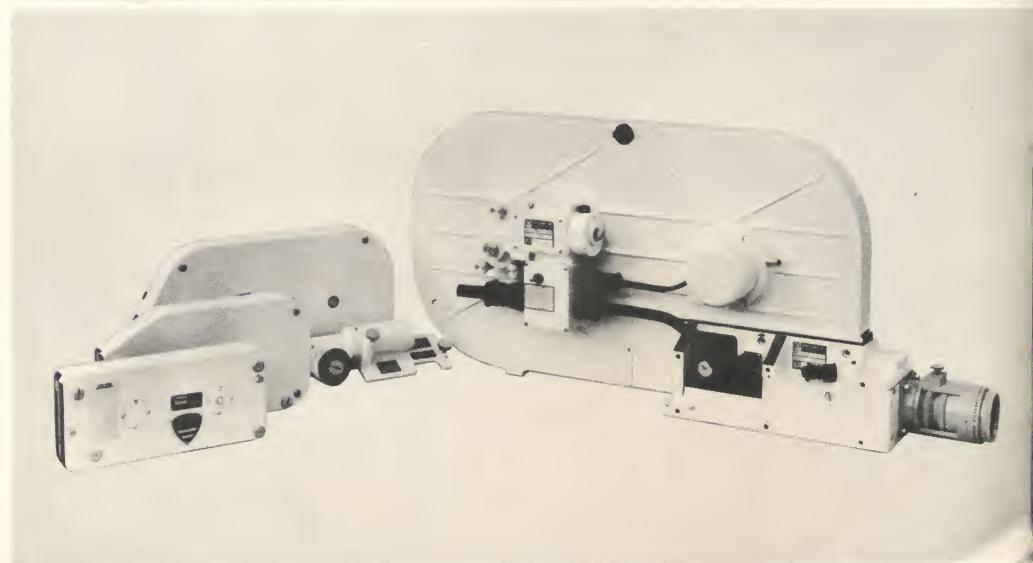
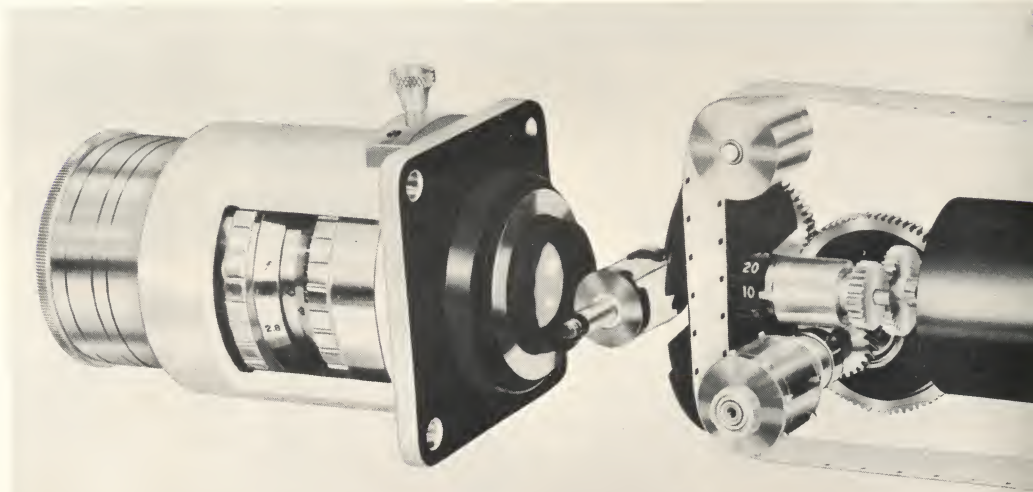
The family of film magazines for the Photo-Sonics 16mm-1B and 16mm-1B/AC cameras includes 100, 200, 400, and 1,200-foot sizes, all instantly interchangeable in the field.

16MM-1B FEATURES:

- ☐ 12 to 1,000 frames/sec, start-stop
- ☐ 100, 200, 400, 1,200-foot film magazines
- ☐ Adjustable disc shutter and prism
- ☐ DC motor

16MM-1B/AC FEATURES:

- ☐ 200, 400, 600, 800 and 1,000 frames/sec, start-stop
- ☐ Slow-speed gear box down to 14 frames/sec
- ☐ 115V AC motor



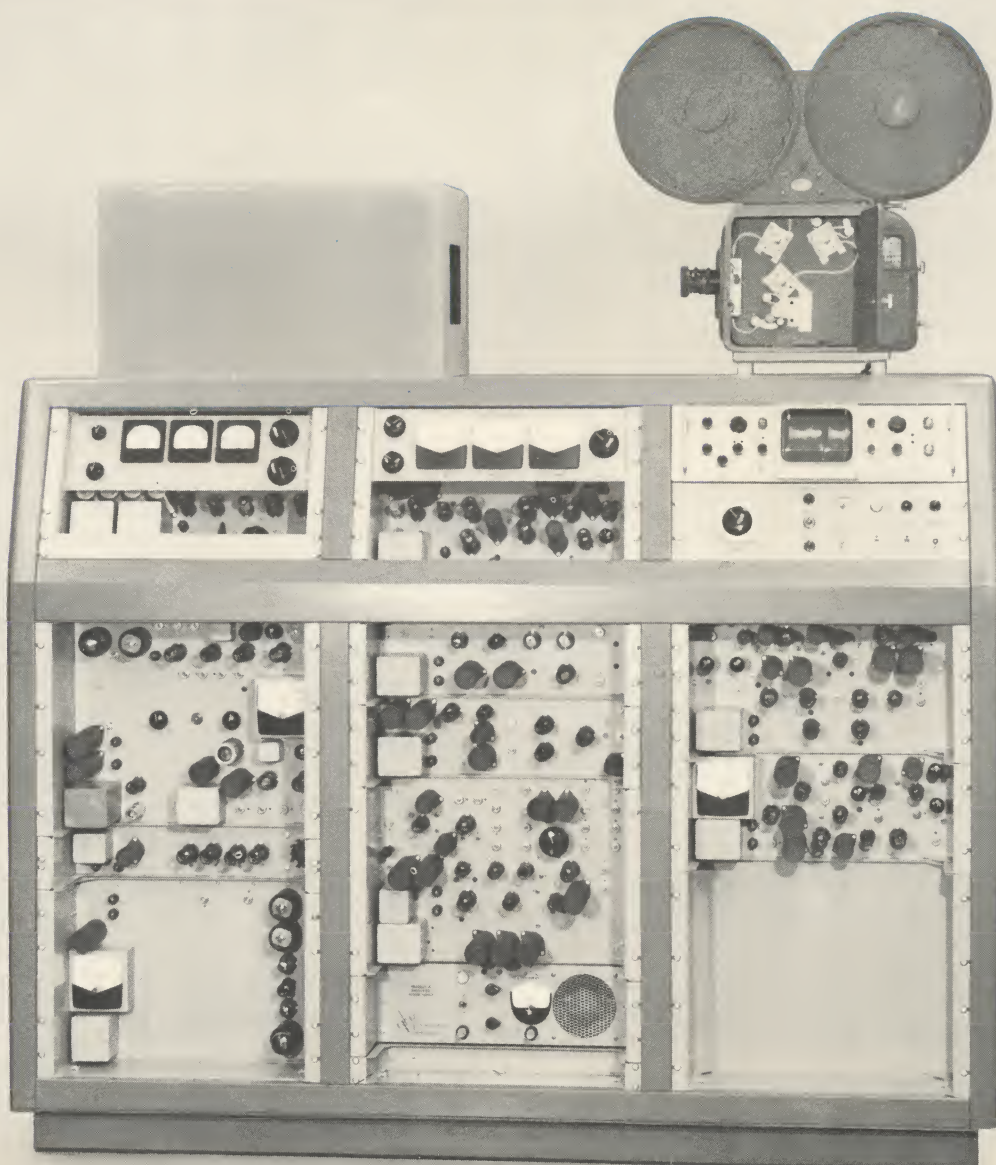


Vue-Tronics, Inc. has developed a series of video film recorders for use with closed-circuit wire systems, direct camera orthicon images, or broadcast TV signals. The family of Models 110, 115, and 120 recorders gives a wide range of equipment ranging from a simplified and compact unit for low budget facilities to broadcast-quality recorders that take full advantage of recent advances in high-resolution TV camera equipment.

16mm recording cameras accommodate either 600 or 1,200-foot magazines, are extremely quiet in operation, and can be used off the TV recording equipment as conventional sound-on-film motion picture cameras.

Rack design permits easy camera access and convenient image tube viewing. All tubes and most pre-set controls are available from the

Vue-Tronics, Inc.
Vue-Tronics
Video
Film
Recorders



VUE-TRONICS FEATURES:

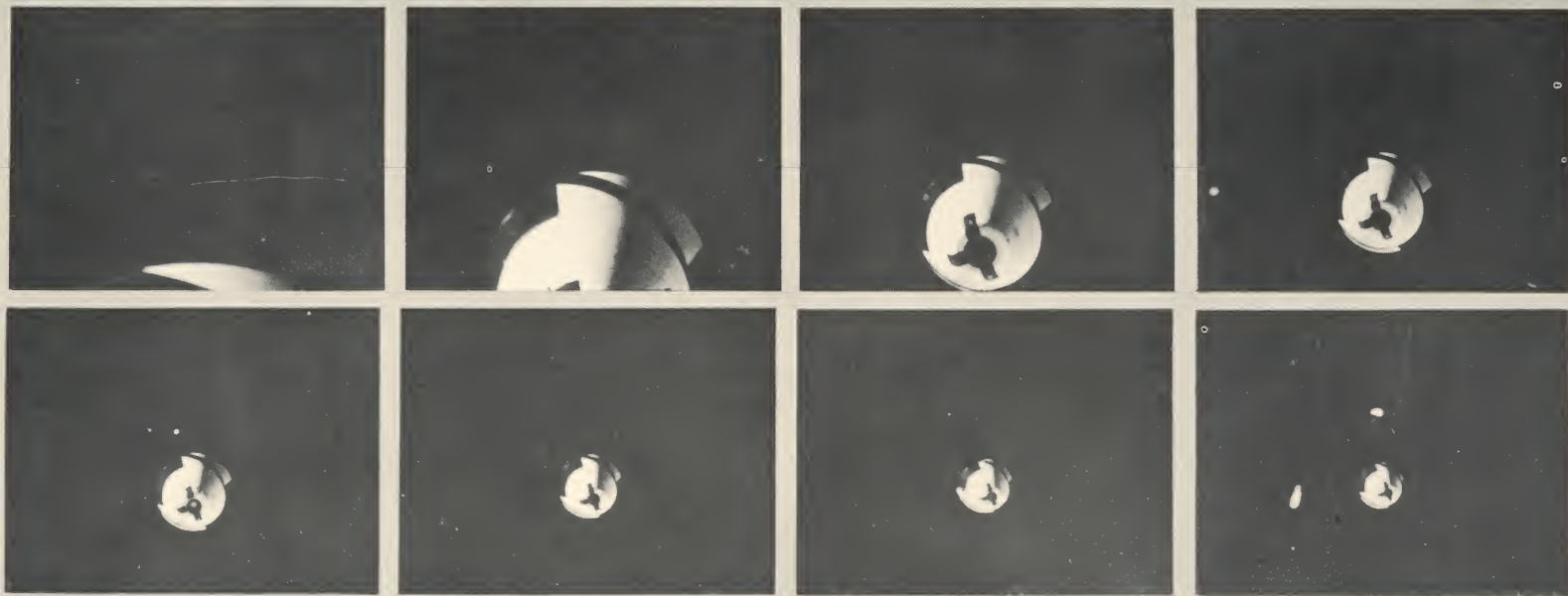
- ☐ High bandwidth recording to 20 mc
- ☐ Standard or high-resolution 945-line screens
 - ☐ Reverse polarity control
- ☐ Full 30-minute recording capacity

front, while all other components are readily reached from the back of the racks.

Vue-Tronics video film recorders are now used in industrial facilities and in large public school systems. The group of recorders shown here is used daily at a major missile launch facility for the recording of launching functions. The high-resolution capabilities of Vue-Tronics recorders meets the current requirement for overall TV camera and recording systems that yield greater detail through use of increased bandwidth and finer resolution screens.

A Vue-Tronics video film recorder will be carried in Traid's demonstration van, and we look forward to an opportunity to display it at your facility. Those activities with work programs involving such a requirement are invited to contact us for full technical details.

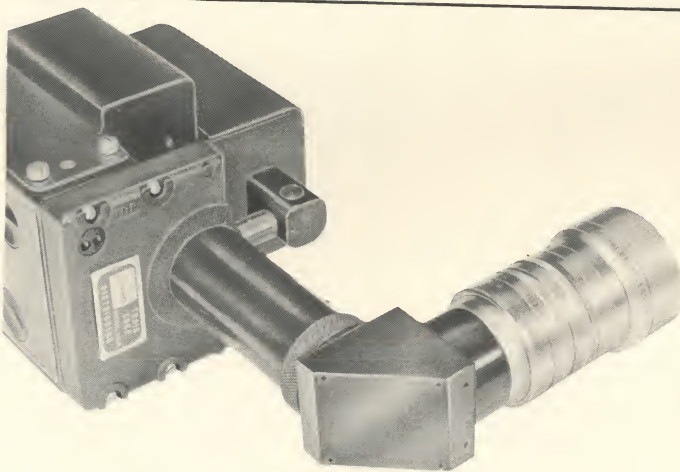
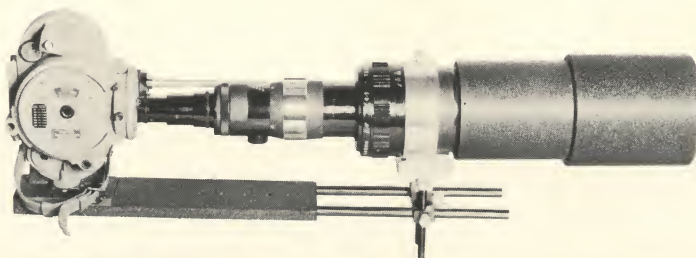




Traid has long served as a central source for special lenses designed for instrumentation use. Our products have ranged from use in space, as in the REDSTONE views shown above, to underwater applications.

Our experience has shown that good optics save money and time. A few examples are shown below—our complete listing of lenses is available for your review.

Specialized Optics



Century Precision Optical Company Traid PANTEL lenses range in focal length from 4" to the 24" f/4.7 unit shown in upper photo. A wide variety of mountings is available.

Traid Corporation Traid FOTOPERISCOPE relay optics, lower photo, permit right-angle viewing and incorporate cross-hair reticles.



Elgeet Optical Company Traid has supplied many thousands of extreme wide-angle lenses for instrumentation use. The 5.0mm Elgeet lens shown above is typical of the wide-angle optics now available from Traid.



Vanguard Instrument Corporation is a leading producer of high-precision film viewing and measuring machines, such as the Model "G" unit shown above. In addition, its line of Vanguard Motion Analyzers shown on the following pages provides compact, desk-top readers that permit photo instrumentation users to acquire a film measurement capability at modest cost.

Activities performing precise film readout work are invited to review the capabilities of the Model "G" machine. Film formats of 3 inches by 6.5 inches can be read to a precision of .0001 inch in X and Y through use of a moving film stage projecting against a fixed reticle system. The system can be further refined by use of a Ferranti grating measuring system to yield repeatable measurements to a least count of one micron.

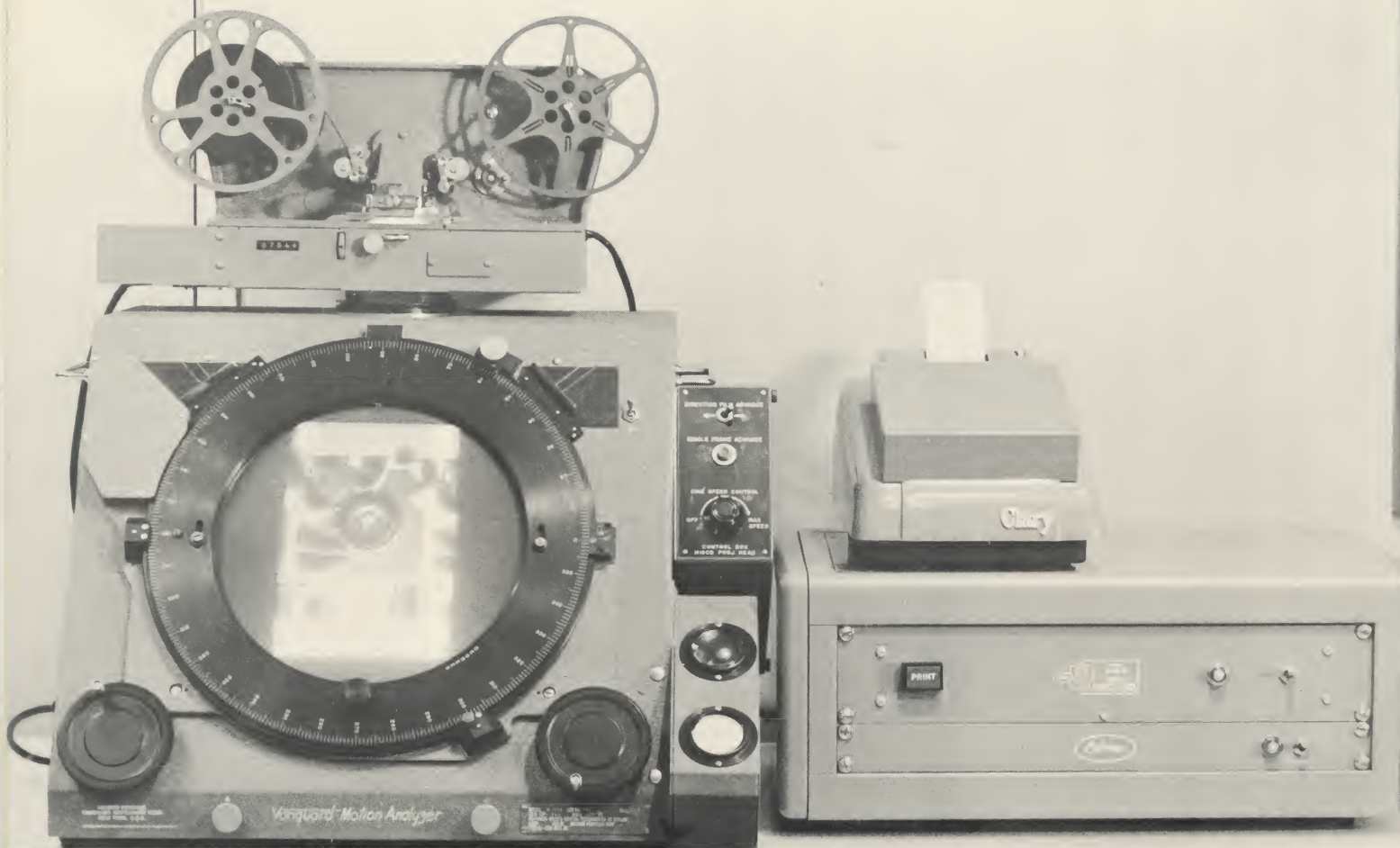
X and Y encoders mounted on the stage micrometer shafts provide automatic readout of these functions to IBM equipment—angles may also be encoded by rotation of the projected reticle.

VANGUARD MODEL "G" FEATURES:

- ☐ 30" x 30" rear projection screen
- ☐ 3" x 6½" measuring stage, steel ball ways on Meehanite castings.
- ☐ Hard steel precision ball screw readout for .0001-inch increments
- ☐ Motorized stage control
- ☐ Wide variety of film transports available.
- ☐ Automatic readout

**Vanguard
Instrument
Corporation**

**Vanguard
Film
Readers**



**Vanguard
Instrument
Corporation**

**Vanguard
Motion
Analyzers**

Experience gained in the design of high-precision film readers such as the Model "G" system has been applied to the rapidly-growing family of Vanguard Motion Analyzers. The user of photo instrumentation equipment can now build up a versatile system of film viewers and readers, including automatic readout capability, at a modest cost. These desk-top units are designed to be used in engineering offices as a regular tool of the test conductor and project engineer, since no special darkened room is required.

By use of the "building block" approach, a complete system for viewing and measuring 16mm, 35mm, or 70mm film records can be achieved in steps. Most of these "building blocks" are carried on the Traid van, thus permitting instrumentation users to view and measure their own film records at their plant locations.

While the Vanguard Motion Analyzers have been designed to provide film reading at moderate cost, they still yield repeatable accuracy of measurement to a least count of .001 inch, more than adequate for the vast bulk of field records.

M-16CD FEATURES:

- ☐ 16mm cine and single framing projection head, 400 or 1,200-foot capacity
- ☐ Head rotates 360°
- ☐ Frame counter digitized for automatic readout

C-11D FEATURES:

- ☐ 11 x 11-inch rear projection screen, brilliant image
- ☐ X and Y crosshairs with illu-

minated scales

- ☐ Digitized X and Y readout to least count of .001 inch
- ☐ Case accepts other Vanguard projection heads interchangeably

A-11D FEATURES:

- ☐ Angle measuring screen with manual measurement to 1/4°
- ☐ Digitized for automatic readout to .1°

(Above unit shown with Clary desktop printer. Can also readout to IBM key punch or summary punch, Friden tape punch, etc. Projection head, viewing case, and angle screen also available without digitizers for manual reading.)



Other components of the Vanguard Motion Analyzer system are shown on this page, including 35mm and 70mm projection heads. The 35mm cine and single framing head, above left, is shown mounted on a projection stand with mirror, which permits use as a wall screen projector. The head can then be lifted from the projection stand and used interchangeably on any of the Vanguard viewing or measuring cases. The 70mm projection head shown below is mounted on a vertical stand for reflected projection, and on the C-13 case, above right, which provides for viewing only at low cost. Again, this head can be interchanged among all of these viewing methods and will also fit on the X-Y measuring case. Full catalog information on the Vanguard Motion Analyzer systems is available for your inspection.

VP-100 STOP-MOTION PROJECTOR FEATURES:

- ☐ 35mm cine or single framing projector
- ☐ 1,000-foot film capacity
- ☐ Projection head rotates 360°
- ☐ Compact and light weight projection stand

M-70/35/16 PROJECTION HEAD FEATURES:

- ☐ Motorized film flow movement, variable speeds
- ☐ Accepts 70mm, 35mm, and 16mm films interchangeably
- ☐ Lens board for variable magnification
- ☐ 1,000-foot film capacity

C-13 VIEWING CASE FEATURES:

- ☐ 13 x 13-inch rear projection screen, brilliant image
- ☐ Accepts all Vanguard projection heads interchangeably
- ☐ Lowest-cost case for use as a "starter" in building up a Vanguard system

S-2 VIEWING STAND FEATURES:

- ☐ Vertical projection stand for office use
- ☐ Accepts all Vanguard projection heads interchangeably
- ☐ 24 x 24-inch high-resolution viewing surface



**Street Laboratory
Of Applied Physics**

A

**Versatile
Photometer**

Street Laboratory of Applied Physics has developed a new exposure photometer of compact design and high accuracy using a silicon cell which is completely linear throughout an intensity range of 15,000:1.

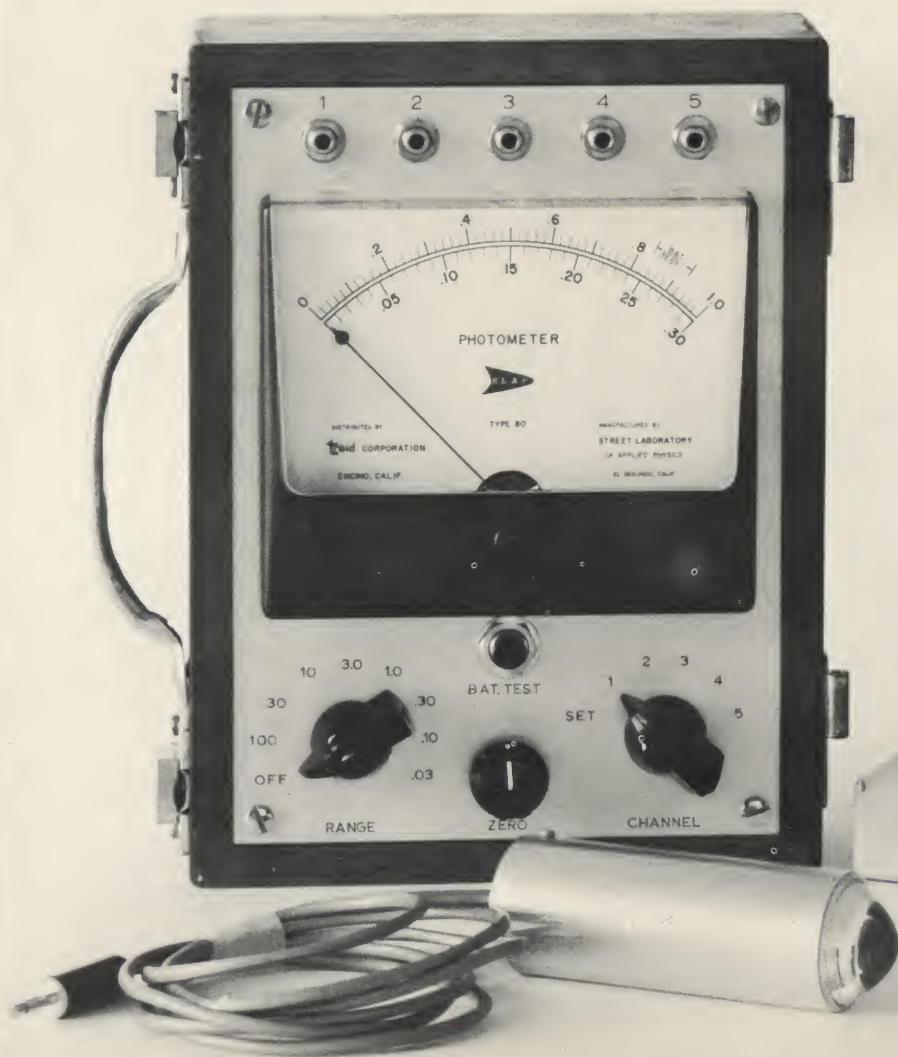
A wide variety of probes is available for use to measure incident or reflected light, ground glass image intensities, light on projection screens, and an infrared-sensitive probe reading in the spectral range of 750 to 1,100 millimicrons.

All solid state circuitry provides a high degree of stability, and repeatable accuracy of $\pm 1\%$ is achieved over the range of 0.2 to 3,000 foot candles.

Regular use of this sensitive and accurate instrument will immediately extend your photographic recording accuracy and reliability.

SLAP-80 FEATURES:

- ☐ Linear response over intensity range of 15,000:1
- ☐ All solid-state
- ☐ Five probes may be used interchangeably
- ☐ Repeatable accuracy $\pm 1\%$



Par Products
Aerospace Controls Corporation
Par 70mm Continuous
Recording Camera

The PAR V-70 Instrumentation Recording System is a simultaneous viewing and direct recording instrument using 70mm Lino-Writ photo recording paper or 70mm film, either perforated or unperforated. A time base grid and ordinate lines are generated by a high speed optical system with a recording speed of 0 to 100 inches per second.

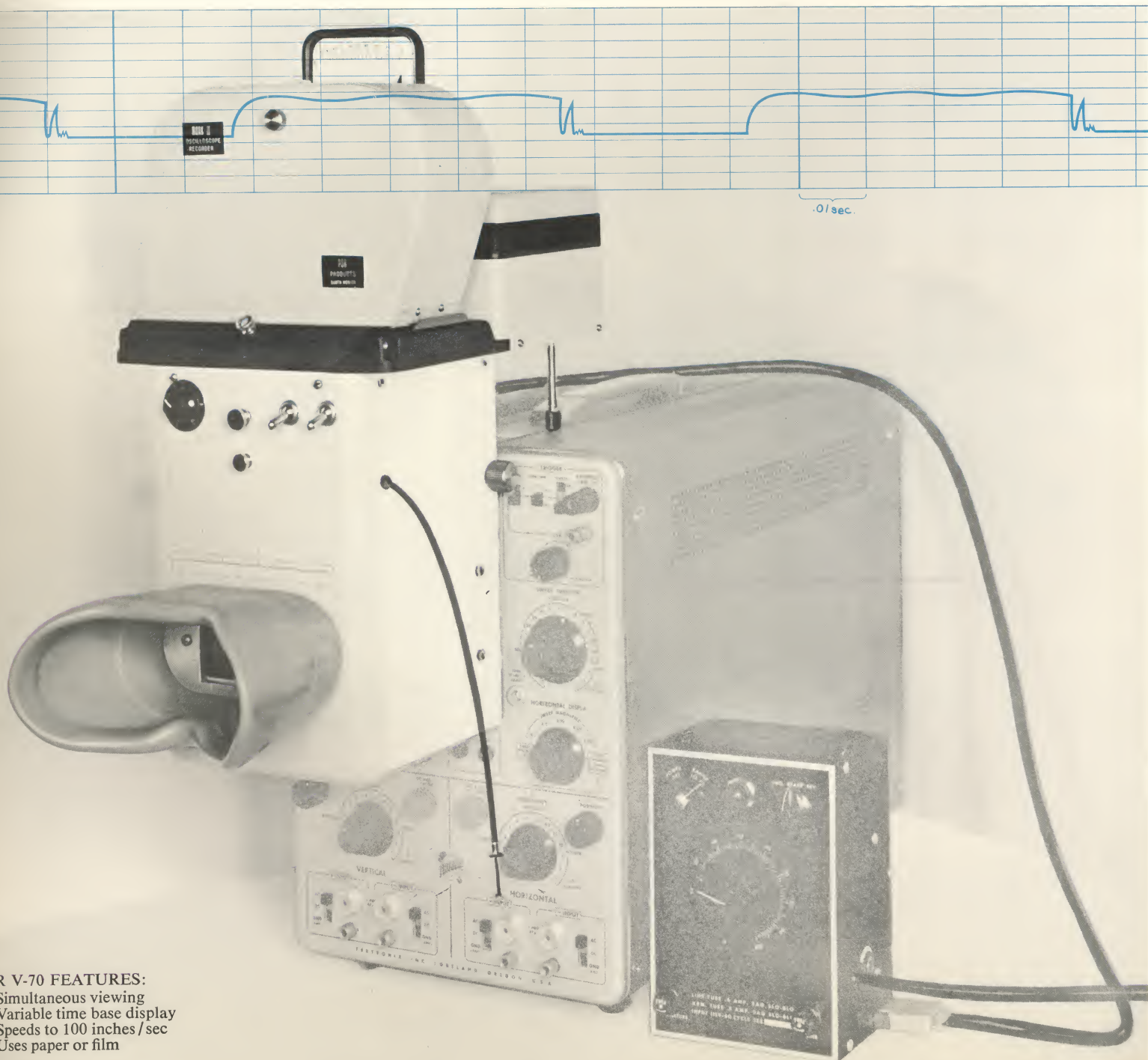
A time base of 1/10 sec can be generated with 1 sec lines emphasized, or 1/100 sec lines can be provided, in which case 1/10 sec lines are emphasized for ease in measurement.

Recording material capacity ranges up to 1,000 feet of 70mm film, or 2,000 feet of Lino-Writ 4 or equal paper.

The PAR V-70 Oscilloscope Continuous Recorder is self-contained and can be easily attached to any conventional oscilloscope with a 5" diameter bezel. A special beam-splitter coupled with a flat-field lens system permits viewing and simultaneous imaging of the CRT beam on the moving film or paper.

The typical record below shows resolution over a 1/10 sec span—each vertical time base line is 1/100 second. Events as short as 75 microseconds may be resolved in the lower speed models, while events of a few microseconds' duration can be accurately measured at a paper or film speed of 100 inches per second.

PAR 70mm Recording Cameras have been extensively used in standard CRT recording applications and in such medical fields as Vectrocardiography, Phonocardiography, and Neuro-Muscular Physiology.



PAR V-70 FEATURES:

- ☐ Simultaneous viewing
- ☐ Variable time base display
- ☐ Speeds to 100 inches/sec
- ☐ Uses paper or film

Traid is proud to present the Observatory Series of Optical Craftsman telescopes that meet the requirements of the professional who demands the finest possible performance. The line includes 6, 8, 10, 12½, and 16 inch units, the latter shown here on its heavy duty mounting.

Available in either Newtonian, Cassegrainian or Newtonian-Cassegrainian forms or modified for use as solar telescopes, Optical Craftsman instruments incorporate mirrors which are parabolic to within $\pm 1/20$ th wavelength. Mirrors are mounted in 9-point flotation cells—shake and vibration are held to a minimum through use of oversize thrust bearings at the tube saddle-declination axis junction.

The 16-inch telescope shown here is capable of resolving 0.28 second of arc. A full line of electric motor drives, camera mounting brackets, oculars, and other accessories is available.

If your instrumentation program requires high accuracy telescopes or optical components, you are invited to discuss these requirements with us. Full technical data are available.

The Optical Craftsman Professional Quality Telescopes



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